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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,331	11/14/2003	Pawan Goyal	ARC920030046US1	4042
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Gregory Smith 3900 Newpark Mall Road Suit 317 Newark, CA 94560			EXAMINER TO, JENNIFER N	
			ART UNIT	PAPER NUMBER
			2195	
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			01/02/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/714,331

Applicant(s)

GOYAL, PAWAN

Examiner

Lewis A. Bullock, Jr.

Art Unit

2195

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1, 3-13 and 24 is/are allowed.
- 6) ☒ Claim(s) 14-23 and 25-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 25-27 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The cited claims detail an optimization means that comprises: means for identifying resource requirements; means for assigning virtual machines; and means for assigning resources at each of the server machines. The cited means is considered to be all software without any hardware and therefore is considered software per se and does not fit the statutory category of a product, e.g. a machine. In addition, the claims are a judicial exception since it covers every "substantial practical application" of the optimization of resources to virtual machines based upon the means language thereby being directed to the abstract idea. See M.P.E.P. 2106, some of which is copied herein.

3. Determine Whether the Claimed Invention Preempts a 35 U.S.C. 101 Judicial Exception (Abstract Idea, Law of Nature, or Natural Phenomenon)

Even when a claim applies a mathematical formula, for example, as part of a seemingly patentable process, USPTO personnel must ensure that it does not in reality "seek[] patent protection for that formula in the abstract." *Diehr*, 450 U.S. at 191, 209 USPQ at 10. "Phenomena of nature, though just discovered, mental processes, abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological

work.” *Benson*, 409 U.S. at 67, 175 USPQ at 675. One may not patent a process that comprises every “substantial practical application” of an abstract idea, because such a patent “in practical effect would be a patent on the [abstract idea] itself.” *Benson*, 409 U.S. at 71-72, 175 USPQ at 676; *cf. Diehr*, 450 U.S. at 187, 209 USPQ at 8 (stressing that the patent applicants in that case did “not seek to pre-empt the use of [an] equation,” but instead sought only to “foreclose from others the use of that equation in conjunction with all of the other steps in their claimed process”). “To hold otherwise would allow a competent draftsman to evade the recognized limitations on the type of subject matter eligible for patent protection.” *Diehr*, 450 U.S. at 192, 209 USPQ at 10. Thus, a claim that recites a computer that solely calculates a mathematical formula (see *Benson*) or a computer disk that solely stores a mathematical formula is not directed to the type of subject matter eligible for patent protection. If USPTO personnel determine that the claimed invention preempts a 35 U.S.C. 101 judicial exception, they must identify the abstraction, law of nature, or natural phenomenon and explain why the claim covers every substantial practical application thereof.

3. Claims 14-23 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The cited claims are directed toward an optimization device comprising of at least one load balancer component, a global resource allocator partitioning component. The cited device and components are software programs / constructs and therefore the claims are directed toward software per se. Although the software is capable of manipulating hardware, i.e. the server machines, the claims themselves are not directed toward the hardware and the software. The claims, in there present form, are directed toward the software device comprising a load balancing program and a resource allocator program and what the functions **would perform when executed**. This is quite different from a network

system comprising of the recited optimization device and multiple server machines that are manipulated by the optimization device.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 25-27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The cited claims detail a single-means claim that is made up of other sub-component means. The claims allow for the invention to be every conceivable means and as detailed in M.P.E.P. 2164.08(a) are rejected under 35 U.S.C. 112 first paragraph.

2164.08(a) Single Means Claim

A single means claim, i.e., where a means recitation does not appear in combination with another recited element of means, is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. *In re Hyatt*, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983) (A single means claim which covered every conceivable means for achieving the stated purpose was held nonenabling for the scope of the claim because the specification disclosed at most only those means known to the inventor.). When claims depend on a recited property, a fact situation comparable to *Hyatt* is possible, where the claim covers every conceivable structure (means) for achieving the stated property (result) while the specification discloses at most only those known to the inventor.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 14-23 and 25-28 are rejected under 35 U.S.C. 102(e) as being anticipated by DILLENBERGER (U.S. Patent 6,732,139)

The applied reference has a common assignee with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As to claim 25, DILLENBERGER teaches a server optimization means, for providing finer grain control in a virtual machine based hosting architecture, comprising: a means for identifying resource requirements (resources used) for multiple different workloads in the virtual machine based hosting architecture (via determining the type of request and sending the request to the appropriate router which hands the request to an

available initiator) (col. 3, line 60 - col. 4, line 7; col. 4, lines 8-47; col. 5, lines 29-55); a means for assigning virtual machines from multiple server machines to a workload according to the identified resource requirements (via creating multiple initiators to handle the request based on the statistics wherein each initiator executes in a separate virtual machine which spans different hosts) (col. 7, lines 55—col. 8, line 3); and a means for assigning resources at each of the multiple server machines to the assigned virtual machines according to the identified resource requirements (via instantiating the initiator, assigns resources to the initiator) (col. 10, lines 17-23).

As to claim 26, DILLENBERGER teaches means for reassigning the virtual machines according to changes in the identified resource requirements (via based on the performance metrics / statistics reassigning virtual machines) (col. 9, lines 26-41)

As to claim 27, DILLENBERGER teaches means for creating virtual machines and assigning virtual machines to workloads in response to instructions received from the global resource allocator partitioning component (via the policy manager / router starting additional initiators or adding additional router capacity) (col. 5, lines 29-54).

As to claim 28, reference is made to a program product that corresponds to the means of claim 25 and is therefore met by the rejection of claim 25 above.

As to claims 14-16, reference is made to a device that corresponds to the means of claims 25-27 and is therefore met by the rejection of claims 25-27 above.

As to claims 17 and 18, DILLENBERGER teaches at least one load balancer continuously monitors the resource requirements for the multiple different workloads and provides changes to the resource requirements of each of the multiple different workloads to the global resource allocator partitioning component such that the resource allocator component redistributes resources to each virtual machine within each of the multiple server machines to optimize workload across the multiple servers (via after finishing the processing the statistics are calculated and noted at the router and kept in an active aging table monitored by the router and available to the policy manager which is capable of starting additional initiators with additional resources or adjusting the resources to the initiators based on the statistics) (col. 7, lines 1-20; col. 5, lines 29-55; col. 9, lines 15-42).

As to claim 19, DILLENBERGER teaches the virtual machines at each of the multiple server machines serve a different one of the multiple different workloads (via subwork() function wherein some request, for service may be split into several smaller semi-independent services to be executed by virtual machines over a plurality of nodes) (see fig. 1; col. 4, lines 32-59).

As to claim 20, DILLENBERGER teaches the resources comprise percentage of CPU, percentage of network bandwidth, disk resources and memory resources (col. 6, lines 30-43; col. 9, lines 26-41).

As to claim 21, DILLENBERGER teaches the instructions being issued automatically via server management software in order to maintained a level of optimization within the system (via the policy manager alleviates the load to the system) (col. 5, lines 29-55).

As to claim 22, DILLENBERGER teaches the multiple different workloads are distributed over a subset of the assigned virtual machines (via subwork() function wherein some request, for service may be split into several smaller semi-independent services to be executed by virtual machines over a plurality of nodes) (see fig. 1; col. 4, lines 32-59).

As to claim 23, DILLENBERGER teaches the multiple different workloads are each assigned to a customer application utilizing the virtual machine based hosting architecture (via subwork() function wherein some request, for service may be split into several smaller semi-independent services to be executed by virtual machines over a plurality of nodes) (see fig. 1; col. 4, lines 32-59).

Allowable Subject Matter

8. Claims 1, 3-13 and 24 are allowed.

Response to Arguments

9. Applicant's arguments with respect to claims 1 and 3-28 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lewis A. Bullock, Jr. whose telephone number is (571) 272-3759. The examiner can normally be reached on Monday-Friday, 8:30 a.m. - 5:00 p.m..

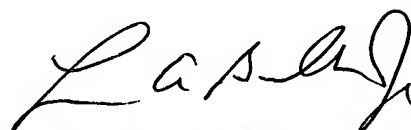
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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December 26, 2007


LEWIS A. BULLOCK, JR.
PRIMARY EXAMINER